

United States of America

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE¹

WRC-03 Agenda Item 1.27: to review, in accordance with Resolutions **540 (WRC-2000)** and **735 (WRC-2000)**, the ITU-R studies requested in those resolutions, and modify, as appropriate, the relevant regulatory procedures and associated sharing criteria contained in Appendices **30** and **30A** and in the associated provisions;

Background Information: Resolution **540 (WRC-2000)** among other things invited the ITU-R to undertake, as a matter of urgency, additional studies and complete them by WRC-03 on the sharing criteria in Annexes 1, 3, 4, and 6 to Appendix **S30** and Annexes 1 and 4 to Appendix **S30A**, taking into account:

- that the sharing criteria in Appendices **S30** and **S30A** should provide appropriate protection to the BSS, FSS and terrestrial services whilst not unduly constraining the services involved (considering g);
- that, worldwide, in various sub-bands of the frequency range 11.7-12.7 GHz, FSS networks as well as BSS networks are in operation, and others will be operated in the near future and, consequently, difficulties may be experienced in modifying their characteristics (considering h);
- that there are differing geographic situations between the ITU Regions and that this may have an impact on the sharing criteria...(recognizing a)

The relevant ITU-R study groups have conducted the requested studies and the results are presented in Section 3.2 of the CPM Report. The proposals contained herein take into account these results, noting that the question of the minimum size of BSS and FSS earth station receiving antennas to be protected in Region 3 was left open. In that regard, the proposals contained herein are based on the following general considerations.

Adequate protection should be provided to the BSS and FSS assignments in all three Regions, taking into account the characteristics of deployed systems as well as the Plan assignments. For instance, in Region 2, there are over 17 million 45-cm BSS receive antennas deployed, in the coterminous U.S. alone, and BSS antennas of up to 240 cm diameter are used in northern Canada, Alaska and Hawaii. FSS systems employ an even wider range of receive earth station antennas, including some with diameters as large as 11 m. Similarly, it is necessary to take the requirements of the different services and their deployment in Regions 1 and 3 into account when developing appropriate inter-Regional sharing criteria. And precisely because the protection requirements of a service in one Region can differ from those in another Region, it is not appropriate to require strict inter-Regional reciprocity; i.e., there is no need to constrain a service in one Region by requiring that it provide more protection than the same service in another Region requires. The application of inter-Regional reciprocity without an operational or technical basis may lead to inefficient use of the limited orbital spectrum resources and unnecessary constraints on services.

Based on the above considerations, these proposals outline sharing criteria designed to protect BSS receive antennas of 45 cm to 2.4 m in Region 2, 60 cm to 2.4 m in Regions 1 and 3 and FSS receive

¹ This is a revision to a previous U.S. proposal for Agenda Item 1.27 (November 1, 2002)

antennas of 60 cm to 11m in all ITU Regions. As previously noted, the antenna patterns and protection objectives are consistent with those outlined in Section 3.2 of the CPM Report.

It is noted that there is still debate on minimum antenna sizes for BSS and FSS receive antennas in Regions 1 and 3 and the U.S. will continue to monitor studies/data with respect to this issue and update its proposals as necessary.

Article 7 of Appendix 30 already includes the 12.2-12.5 GHz band. Consequently, the text contained in provision 5.491, which states “with the applicable frequency band extended to cover 12.2-12.5 GHz” is no longer needed.

Proposal:

APPENDIX 30* (WRC-2000)

ANNEX 1 (WRC-2000)

Limits for determining whether a service of an administration is affected by a proposed modification to the Region 2 Plan or by a proposed new or modified assignment in the Regions 1 and 3 List or when it is necessary under this Appendix to seek the agreement of any other administration¹⁴

(See Article 4)

USA/ /1 NOC

2 Limits to the change in the overall equivalent protection margin for frequency assignments in conformity with the Region 2 Plan

Reasons: ITU-R studies did not identify a need to modify this section. Therefore the current OEPM degradation limit is appropriate and should be maintained.

USA/ /2 MOD

* The expression “frequency assignment to a space station”, wherever it appears in this Appendix, shall be understood to refer to a frequency assignment associated with a given orbital position. See also Annex 7 for the orbital limitations. (WRC-2000)

¹⁴ With respect to this Annex, except for Section 2, the limits relate to the power flux-density which would be obtained assuming free-space propagation conditions.

With respect to Section 2 of this Annex, the limit specified relates to the overall equivalent protection margin calculated in accordance with § 2.2.4 of Annex 5.

3 Limits to the change in the power flux-density to protect the broadcasting-satellite service in Regions 1 and 2 in the band 12.2-12.5 GHz and in Region 3 in the band 12.5-12.7 GHz

With respect to § 4.1.1 c) of Article 4, an administration in Region 2 shall be considered as being affected if the proposed new or modified assignment in the Regions 1 and 3 List would result in exceeding the power flux-densities given below, at any test point in the service area affected.

$-147 \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	for $0^\circ \leq \theta < 0.23^\circ$
$-135.7 + 17.74 \log \theta \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	for $0.23^\circ \leq \theta < 1.8^\circ$
$-134.0 + 0.89 \theta^2 \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	for $1.8^\circ \leq \theta < 5.0^\circ$
$-129.2 + 25 \log \theta \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	for $5.0^\circ \leq \theta < 10.57^\circ$
$-103.6 \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	for $10.57^\circ \leq \theta$

With respect to § 4.2.3 a), 4.2.3 b) or 4.2.3 f) of Article 4, as appropriate, an administration in Region 1 or 3 shall be considered as being affected if the proposed modification to the Region 2 Plan would result in exceeding the power flux-densities given below, at any test point in the service area affected:

$-147 \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	for $0^\circ \leq \theta < 0.44^\circ$
$-138 + 25 \log \theta \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	for $0.44^\circ \leq \theta < 19.1^\circ$
$-106 \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	for $\theta \geq 19.1^\circ$
$-147 \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	for $0^\circ \leq \theta < 0.23^\circ$
$-135.7 + 17.74 \log \theta \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	for $0.23^\circ \leq \theta < 2.0^\circ$
$-136.7 + 1.66 \theta^2 \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	for $2.0^\circ \leq \theta < 3.59^\circ$
$-129.2 + 25 \log \theta \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	for $3.59^\circ \leq \theta < 10.57^\circ$
$-103.6 \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	for $10.57^\circ \leq \theta$

where θ is:

- the difference in degrees between the longitudes of the broadcasting-satellite space station in Region 1 or 3 and the broadcasting-satellite space station affected in Region 2 taking into account the East West station keeping accuracies, or
- the difference in degrees between the longitudes of the broadcasting-satellite space station in Region 2 and the broadcasting-satellite space station affected in Region 1 or 3 taking into account the East West station keeping accuracies.

Reasons: ITU-R studies determined this mask was appropriate for inter-regional protection of BSS networks from BSS networks utilizing receive antenna sizes between 45 cm to 2.4 m for Region 2 and 60 cm to 2.4 m for Regions 1 and 3.

USA/ /3 NOC

4 Limits to the power flux-density to protect the terrestrial services of other administrations^{18, 19, 20}

USA/ /4 MOD

6 Limits to the change in the power flux-density of assignments in the Regions 1 and 3 Plan List to protect the fixed-satellite service (space-to-Earth) in the band 11.7-12.2 GHz in Region 2 or in the band 12.2-12.5 GHz in Region 3, and of assignments in the Region 2 Plan to protect the fixed-satellite service (space-to-Earth) in the band 12.5-12.7 GHz in Region 1 and in the band 12.2-12.7 GHz in Region 3

With respect to § 4.1.1 e) of Article 4, an administration ~~in Region 2 or Region 3~~ shall be considered as being affected if the proposed new or modified assignment in the Regions 1 and 3 List would result in an increase in the power flux-density over the service area of a fixed-satellite service network in Region 2 or Region 3 with overlapping frequency assignments on its territory of 0.25 dB or more above that resulting from the frequency assignments in the Plan or List for Regions 1 and 3 as established by WRC-2000.

With respect to § 4.2.3 e), an administration ~~in Region 1 or 3~~ shall be considered as being affected if the proposed modification to the Region 2 Plan would result in an increase in the power flux-density over the service area of a fixed-satellite service network in Region 1 or Region 3 with overlapping frequency assignments on its territory of 0.25 dB or more above that resulting from the frequency assignments in the Region 2 Plan at the time of entry into force of the Final Acts of the 1985 Conference.

With respect to § 4.1.1 e) of Article 4, where a proposed new or modified assignment in the Regions 1 and 3 List would result in not exceeding the gives a power flux-densities given below of less than 138 dB(W/(m² · 27 MHz))²⁴ over the service area of a fixed-satellite service network anywhere in the territory of an administration of in Region 2 or Region 3 with overlapping frequency assignments, that administration shall be considered as not being affected. With respect to § 4.2.3 e) of Article 4, where a proposed modification to the Region 2 Plan would result in not exceeding the gives a power flux-densities given below of less than 160 dB (W/(m² · 4 kHz))²⁴ over the service area of its fixed-satellite service network anywhere in the territory of an administration of in Region 1 or 3 with overlapping frequency assignments, that administration shall be considered as not being affected.

$-186.5 \text{ dB(W/(m}^2 \cdot 40 \text{ kHz))}$	for $0^\circ \leq \theta < 0.054^\circ$
$-164.0 + 17.74 \log \theta \text{ dB(W/(m}^2 \cdot 40 \text{ kHz))}$	for $0.054^\circ \leq \theta < 2.0^\circ$
$-165.0 + 1.66 \theta^2 \text{ dB(W/(m}^2 \cdot 40 \text{ kHz))}$	for $2.0^\circ \leq \theta < 3.59^\circ$

¹⁸ See § 3.18 of Annex 5.

¹⁹ In the band 12.5-12.7 GHz in Region 1, these limits are applicable only to the territory of administrations mentioned in Nos. **5.494** and **5.496**.

²⁰ See Resolution **34**.

²⁴ ~~In place of these values, the values given in the Annex to Resolution **540 (WRC 2000)** shall be applied by administrations and the Bureau until this section is revised by a subsequent conference.~~

$$\begin{array}{ll} -157.5 + 25 \log \theta \text{ dB(W/(m}^2 \cdot 40 \text{ kHz))} & \text{for } 3.59^\circ \leq \theta < 10.57^\circ \\ -131.9 \text{ dB(W/(m}^2 \cdot 40 \text{ kHz))} & \text{for } 10.57^\circ \leq \theta \end{array}$$

where θ is:

- the difference in degrees between the longitudes of the broadcasting-satellite space station in Region 1 or 3 and the affected fixed-satellite space station in Region 2 or 3 taking into account the East West station keeping accuracies, or
- the difference in degrees between the longitudes of the broadcasting-satellite space station in Region 2 and the affected fixed-satellite space station in Region 1 or 3 taking into account the East West station keeping accuracies.

Reasons: ITU-R studies determined this mask was appropriate for inter-regional protection of FSS networks from BSS networks utilizing receive antenna sizes between 60 cm and 11 m. The regulatory changes to the text are to align the Radio Regulations with how the Radiocommunication Bureau currently treats filings in these bands through Rules of Procedures.

USA/ /5 MOD

7 Limits to the change in equivalent noise temperature to protect the fixed-satellite service (Earth-to-space) in Region 1 from modifications to the Region 2 Plan in the band 12.5-12.7 GHz

With respect to § 4.2.3 *e*) of Article 4, an administration of Region 1 shall be considered as being affected if the proposed modification to the Region 2 Plan would result in:

- the value of $\Delta T / T$ resulting from the proposed modification is greater than the value of $\Delta T / T$ resulting from the assignment in the Region 2 Plan as of the date of entry into force of the Final Acts of the 1985 Conference; *and*
- the value of $\Delta T / T$ resulting from the proposed modification exceeds 46%,

using the method of Appendix 8 (Case II).

Reasons: ITU-R studies determined that 6% provided adequate protection and are consistent with the agreed method used to derive other pfd levels in this Annex.

USA/ /6 MOD

ANNEX 4 (WRC-2000)

Need for coordination of a transmitting space station in the fixed-satellite service or in the broadcasting-satellite service where this service is not subject to a Plan: in Region 2 (11.7-12.2 GHz) with respect to the Regions 1 and 3 the Plan, the List, or proposed new or modified assignments in the List for Regions 1 and 3; in Region 1 (12.5-12.7 GHz) and in Region 3 (12.2-12.7 GHz) with respect to the Region 2 Plan, or proposed modifications to the Plan

for Region 2; in Region 3 (12.2 – 12.5 GHz) with respect to the Plan, the List, or proposed new or modified assignments in the List for Region 1

(See Article 7)

With respect to § 7.1 and 7.2 of Article 7, coordination of a space station in the fixed-satellite service of Region 2 is required with another administration when, under assumed free-space propagation conditions, the power flux-density ~~on the territory over the service area of a space station in the broadcasting-satellite service of Regions 1 or 3 with the overlapping frequency assignments in the broadcasting-satellite service of an administration in Region 1 or Region 3~~ exceeds the value derived from the expressions given below.

$-147 \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	for $0^\circ \leq \theta < 0.23^\circ$
$-135.7 + 17.74 \log \theta \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	for $0.23^\circ \leq \theta < 2.0^\circ$
$-136.7 + 1.66 \theta^2 \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	for $2.0^\circ \leq \theta < 3.59^\circ$
$-129.2 + 25 \log \theta \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	for $3.59^\circ \leq \theta < 10.57^\circ$
$-103.6 \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	for $10.57^\circ \leq \theta$

where θ is:

- the difference in degrees between the longitude of the interfering fixed-satellite service space station in Region 2 and the longitude of the affected broadcasting-satellite service space station in Regions 1 and 3 taking into account the East West station keeping accuracies

With respect to § 7.1 and 7.2 of Article 7, coordination of a space station in the fixed-satellite service of Region 3 is required with another administration when, under assumed free-space propagation conditions, the power flux-density over the service area of a space station in the broadcasting-satellite service in Region 1 with overlapping frequency assignments exceeds the value derived from the expressions given below:

$-147 \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	for $0^\circ \leq \theta < 0.23^\circ$
$-135.7 + 17.74 \log \theta \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	for $0.23^\circ \leq \theta < 2.0^\circ$
$-136.7 + 1.66 \theta^2 \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	for $2.0^\circ \leq \theta < 3.59^\circ$
$-129.2 + 25 \log \theta \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	for $3.59^\circ \leq \theta < 10.57^\circ$
$-103.6 \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	for $10.57^\circ \leq \theta$

where θ is:

- the difference in degrees between the longitude of the interfering fixed-satellite service space station in Region 3 and the longitude of the affected broadcasting-satellite service space station in Region 1 taking into account the East West station keeping accuracies

With respect to § 7.1 and 7.2 of Article 7, coordination of a space station in the fixed-satellite service (space-to-Earth) in Region 1 or 3 or broadcasting-satellite service not subject to a Plan in Region 3 is required with another administration when, under assumed free-space propagation conditions, the power flux-density ~~on the territory over the service area of a space station in the broadcasting-satellite service of Region 2 with the overlapping frequency assignments in the~~

~~broadcasting-satellite service of an administration in Region 2 exceeds the value derived from the same expressions given below:~~

147 dB(W/(m² · 27 MHz))	for 0° ≤ θ < 0.44°
138 + 25 log θ dB(W/(m² · 27 MHz))	for 0.44° ≤ θ < 19.1°
106 dB(W/(m² · 27 MHz))	for θ ≥ 19.1°
−147 dB(W/(m² · 27 MHz))	for 0° ≤ θ < 0.23°
−135.7 + 17.74 log θ dB(W/(m² · 27 MHz))	for 0.23° ≤ θ < 1.8°
−134.0 + 0.89 θ² dB(W/(m² · 27 MHz))	for 1.8° ≤ θ < 5.0°
−129.2 + 25 log θ dB(W/(m² · 27 MHz))	for 5.0° ≤ θ < 10.57°
−103.6 dB(W/(m² · 27 MHz))	for 10.57° ≤ θ

where θ is:

- ~~the difference in degrees between the longitude of the interfering fixed-satellite service space station in Region 2 and the longitude of the affected broadcasting-satellite service space station in Regions 1 and 3, or~~
- the difference in degrees between the longitude of the interfering fixed-satellite service space station in Region 1 or 3 or the interfering broadcasting-satellite service space station in Region 3 and the longitude of the affected broadcasting-satellite service space station in Region 2 taking into account the East West station keeping accuracies.

Reasons: ITU-R studies determined that these power flux densities provide adequate protection to the BSS. The regulatory changes to the text are to align the Radio Regulations with how the Radiocommunication Bureau currently treats filings in these bands through Rules of Procedures.

ANNEX 6³⁹

Criteria for sharing between services

USA/ 7 ADD

Part A Technical bases for the criteria for sharing between space services in Annexes 1 and 4 of this Appendix

The revised inter-Regional sharing criteria involving the fixed-satellite service and the broadcasting-satellite service in the bands governed by Appendix 30 are based on the following assumptions.

³⁹ Sections 1 and 2 of Part B of this Annex are applicable when the services of Regions 1 or 3 are involved. Section 3 of Part B is applicable to all Regions.

1 Reference Antenna Patterns

1.1 For earth station antennas in the fixed-satellite service or in the broadcasting-satellite service with diameters between 45 cm and 240 cm, the gain of the side lobes is given by [Recommendation ITU-R BO.1213].

1.2 For earth station antennas in the fixed-satellite service with diameters greater than 240 cm, the gain of the side lobes is given by Recommendation ITU-R S.580-5, with $29-25\log \theta$ side-lobe envelope, complemented in the main lobe by Annex III to Appendix 8, which is equivalent to Section 3 of Annex 3 to Appendix 7 (WRC-2000).

1.3 For the broadcasting-satellite service and fixed-satellite service earth stations an antenna efficiency of 65% was used at a frequency of 11.7 GHz.

2 Antenna Sizes And Noise Temperatures

The range of antenna sizes and associated noise temperatures considered for the protection of the fixed-satellite service and the broadcasting-satellite service are given in the following table:

<u>Receive earth station antenna diameter (m)</u>	<u>0.45</u>	<u>0.60</u>	<u>0.80</u>	<u>1.20</u>	<u>2.4</u>	<u>5.0</u>	<u>8.0</u>	<u>11.0</u>
<u>Receive earth station noise temperature (K)</u>	<u>110</u>	<u>110</u>	<u>125</u>	<u>150</u>	<u>150</u>	<u>200</u>	<u>250</u>	<u>250</u>
<u>Total link noise temperature (K)</u>	<u>174</u>	<u>174</u>	<u>198</u>	<u>238</u>	<u>238</u>	<u>317</u>	<u>396</u>	<u>396</u>

The total link noise temperature was calculated from the receive earth station noise temperature (which includes the antenna temperature, the receive amplifier temperature and the noise increase resulting from feeder losses), and adding 2 dB for all other sources of noise (uplink noise, GSO interference, cross polarization isolation and frequency reuse interference).

3 Protection Criteria

Pfd masks developed in Sections 3 and 6 of Annex 1 and in Annex 4 to Appendix 30 have been determined by specifying to 6% the allowable relative noise increase ($\Delta T/T$) into the range of earth station antennas given in the above table.

The allowable interfering pfd was calculated by the following expression:

$$PFD_{all}(\theta) = 10\log(\Delta T/T) + 10\log(kT b_{rf}) + G_m - G_a(\varphi)$$

where:

$PFD_{all}(\theta)$ = allowable level of interfering PFD for an orbital separation of θ degrees

$\Delta T/T$ = allowable relative increase in receiver link noise = 6%

k = Boltzmann's constant (1.38×10^{-23} Watt·sec/°K)

T = Receive link noise temperature (see the above Table)

b_{rf} = Reference bandwidth (27 MHz in Regions 1 and 3; 24 MHz in Region 2)

G_m = Gain of a 1 m² effective aperture

$G_a(\varphi)$ = Receive antenna gain for topocentric angle of φ degrees ($\varphi = 1.1 \theta$)
using the reference antennas defined in Section 1

4 Power Flux-Density For Fss And Bss With Specific Antenna Diameters

The table below contains power flux-density levels derived for FSS and BSS earth stations with specific antenna diameters assuming the characteristics defined in Sections 1.2 and 3 above. These levels were used to develop the pfd masks in Sections 3 and 6 of Annex 1 and in Annex 4 of Appendix 30 by taking the envelope of the individual pfd masks for the relevant antenna sizes.

Power flux-density (pfd) in dB (W/m²/27 MHz) corresponding to different antenna diameters								
<u>Orbital separation between wanted and interfering space stations</u>	<u>45 cm</u>	<u>60 cm</u>	<u>80 cm</u>	<u>120 cm</u>	<u>240 cm</u>	<u>500 cm</u>	<u>800 cm</u>	<u>1 100 cm</u>
<u>0°</u>	<u>-134.2</u>	<u>-136.7</u>	<u>-138.7</u>	<u>-142.2</u>	<u>-147.4</u>	<u>-152.5</u>	<u>-155.6</u>	<u>-158.2</u>
<u>$\theta > 0$</u>	For any value of the orbital separation θ between the wanted and interfering space stations, the applicable pfd should be relaxed from the value corresponding to 0° orbital separation by adding the off-axis antenna discrimination, as calculated under the assumptions in Section 1 above.							

Reasons: The proposed revisions to the sharing criteria in Sections 3 and 6 of Annex 1 and in Annex 4 to Appendix 30 are based on assumptions on antenna patterns, transmission characteristics (antenna sizes and associated noise temperatures) and protection criteria that should be explained in this Annex.

USA/ /8 ADD

Part B Sharing criteria used in establishing the WARC-77 Plan

USA/ /9 NOC

Sections 1 to 3 of Annex 6

Reasons: These sections are maintained for historical purposes since they explain the sharing criteria which were used in establishing the original WARC-77 Plan.

USA/ /10 ADD

Editorial note: the text provided below should be added to the end of Section 3.4 in order to restore existing text that was inadvertently omitted in the editing of Annex 5 to Appendix 30 following WRC-2000.

ANNEX 5

**Technical data used in establishing the provisions and associated Plans
and the Regions 1 and 3 List, which should be used
for their application²² (WRC-2000~~3~~)**

3.4 Protection ratio between television signals

In Region 2, the following protection ratios have been adopted for the purpose of calculating the overall equivalent protection margin²:

28 dB for co-channel signals;

13.6 dB for adjacent-channel signals;

-9.9 dB for second adjacent-channel signals.

In Region 2, as a guide for planning, the reduction in the overall C/I ratio due to co-channel interference in the feeder link is taken as equivalent to a degradation in the down-link co-channel C/I ratio of approximately 0.5 dB not exceeded for 99% of the worst month, but the feeder-link and downlink Plans are evaluated on the basis of the overall equivalent protection margin, which includes the combined downlink and feeder-link contributions.

In Region 2, an overall equivalent protection margin of 0 dB, or greater, indicates that the individual protection ratios have been met for the co-channel, the adjacent channels and the second adjacent channels.

¹ The definitions in §§ 1.7, 1.8, 1.9, 1.10 and 1.11 of the Annex apply to these calculations.

USA/ /11 MOD

3.9.4 The guard bands at both the lower and upper edges may be used for transmission in the space operation service to provide space operations functions in accordance with No. 1.23 in support of the operation of geostationary-satellite networks in the broadcasting-satellite service.

USA/ /12 NOC

ANNEX 7 (WRC-2000)

Orbital position limitations

Reason: The ITU-R studies lead to the conclusion that the proposed changes to the sharing criteria did not warrant changing the §A3 limitations.

²² In revising this Annex at WRC-97 and at WRC-2000, no changes have been made to the technical data applicable to the Region 2 Plan. However, for all three Regions, it should be noted that some of the parameters of networks proposed as modifications to the Region 2 Plan and the Regions 1 and 3 List may differ from the technical data presented herein. (WRC-2000)

² The definitions in §§ 1.7, 1.8, 1.9, 1.10 and 1.11 of the Annex apply to these calculations.

APPENDIX 30A

ANNEX 1

Limits for determining whether a service of an administration is considered to be affected by a proposed modification to the Region 2 feeder-link Plan or by a proposed new or modified assignment in the Regions 1 and 3 feeder-link Lists or when it is necessary under this Appendix to seek the agreement of any other administration (WRC-2000)

USA/ /13 **NOC**

- 3 Limits to the change in the overall equivalent protection margin with respect to frequency assignments in conformity with the Region 2 feeder-link Plan¹⁸ (WRC-2000)**

Reason: There was a consensus among Region 2 administrations participating in the ITU-R studies, which the current OEPM degradation limit was appropriate and should be maintained.

ARTICLE 5

USA/ /14 **MOD**

5.491 Additional allocation: in Region 3, the band 12.2-12.5 GHz is also allocated to the fixed-satellite service (space-to-Earth) on a primary basis. The power flux-density limits in Table **21-4** of Article **21** shall apply to this frequency band. The introduction of the service in relation to the broadcasting-satellite service in Region 1 shall follow the procedures specified in Article 7 of Appendix **30**, ~~with the applicable frequency band extended to cover 12.2-12.5 GHz.~~

Reasons: Article 7 of Appendix **30** already includes the 12.2-12.5 GHz band. Consequently, the above deleted phrase is no longer needed.
